

CLAIMS

1. A magnetic recording medium comprising a non-magnetic substrate, an amorphous or micro crystal seed layer at least containing Ti and Al formed on the non-magnetic substrate, a magnetic layer containing a Co alloy, and an underlayer formed between the seed layer and the magnetic layer containing the Co alloy.

2. A magnetic recording medium comprising a non-magnetic substrate, an amorphous or micro crystal seed layer at least containing Ti and Al formed on the non-magnetic substrate, an underlayer containing Cr or Cr alloy and a magnetic layer containing a Co alloy formed on the underlayer.

3. A magnetic recording medium as defined in claim 1, wherein the seed layer contains at least 35 at% or more and 65 at% or less of Ti, and at least 35 at% or more and 65 at% or less of Al based on the entire composition.

4. A magnetic recording medium as defined in claim 1, wherein the underlayer comprises a multi-layered structure having at least two layers, the underlayer of the multi-layered structure comprises a first underlayer containing Cr or CrTi and a second underlayer containing at

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least one element selected from Cr, Nb, Mo, Ta, W and Ti, formed successively from the side nearer to the substrate.

5. A magnetic recording medium as defined in claim 1, wherein one or plurality of underlayers are formed on the seed layer, and a CoCr alloy system magnetic layer containing 0.5 at% or more and 8.0 at% or less of at least one element selected from C, B, Si and Ta is formed on the underlayer.

6. A magnetic recording medium as defined in claim 5, wherein one or a plurality of intermediate layers containing at least Co and Cr are formed on one or a plurality of underlayers, a CoCr alloy system magnetic layer containing 0.5 at% or more and 8.0 at% or less of at least one element selected from C, B, Si and Ta is formed on one or a plurality of the underlayers.

7. A magnetic recording medium as defined in any one of claims 1 to 5, wherein the magnetic layer has an h.c.p structure and is oriented in (11.0) direction relative to the plane parallel with the substrate.

8. A magnetic recording apparatus including a magnetic recording medium having an amorphous or micro crystal seed

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9. A magnetic recording apparatus as defined in claim 7, wherein the magnetoresistive sensor is a spin valve type magnetoresistive sensor.

10. A magnetic recording apparatus as defined in claim 7, wherein the magnetoresistive sensor is a tunnel effect type magnetoresistive sensor.

11. A method of manufacturing a magnetic recording medium including a process of forming a seed layer containing at least Ti and Al on a substrate and conducting an oxidizing or nitriding treatment to the seed layer after forming the seed layer.